

1. A PMR head with a stitched write shield comprising:
  - a PMR head having a magnetic pole and a main write shield formed symmetrically above said magnetic pole, said main write shield having a leading edge and said pole having a trailing edge with a trailing edge width,  $W_{MPTE}$ , in the ABS plane;
  - a stitched write shield formed symmetrically on the leading edge of said main write shield and symmetrically above said magnetic pole, the trailing edge of said stitched write shield contacting the leading edge of said main write shield and said stitched write shield having a thickness,  $T_{SWS}$ , and said stitched write shield having a leading edge with a leading edge width,  $W_{SWSLE}$ , in the ABS plane;
  - a write gap layer formed between the leading edge of said stitched write shield and the trailing edge of said magnetic pole.
2. The PMR head of claim 1 wherein a design parameter,  $d$ , which is  $1/2(W_{SWSLE} - W_{MPTE})$ , is between approximately 0 and 0.1 microns.
3. The PMR head of claim 1 wherein  $T_{SWS}$  is between approximately 0 and 1.0 microns.
4. The PMR head of claim 1 wherein the main pole, the main shield and the stitched shield are formed of the ferromagnetic materials Fe, Co, CoNiFe, FeCo, NiFe, their

composites, their oxygen or nitrogen doped composites, their amorphous forms or their multi-layered laminates which may include the insertion of non-magnetic layers.

5. The PMR head of claim 1 wherein  $T_{\text{SWS}}$  is between approximately 0 and 1.0 microns,  $W_{\text{SWSLE}}$  is between approximately 0.1 and 0.22 microns and  $W_{\text{MPTE}}$  is between approximately 0.1 and 0.2 microns.

6. The PMR head of claim 1 wherein the write gap layer is formed of the insulating material alumina, to a thickness between approximately 0.04 and 0.16 microns.